

## WHAT IS CLAIMED IS:

1. An isolated microorganism strain, *Lactobacillus rhamnosus* GM-020, deposited at the China Center for Type Culture Collection under CCTCC No.: CCTCC M 203098.

5           2. A composition comprising the strain according to Claim 1.

3. A method for treating obesity and a complication thereof in a subject comprising administering said subject with a composition comprising the isolated microorganism according to Claim 1.

10           4. The method according to Claim 3, wherein the composition further comprises *Auricularia polytricha*.

5. The method according to Claim 3, wherein the complication is selected from the group consisting of hypercholesterolemia, atherosclerosis and coronary heart disease.

15           6. A method for treating obesity and a complication thereof in a subject comprising administering said subject with a composition comprising the strain according to Claim 1 and *Auricularia polytricha*.

7. The method according to Claim 6, wherein the complication is selected from the group consisting of hypercholesterolemia, atherosclerosis, coronary heart disease, fatty liver, and diabetes mellitus.

20           8. A composition according to claim 2, which is used for treating obesity and a complication thereof.

9. The composition according to Claim 8 further comprising *Auricularia polytricha*.

25           10. The composition according to Claim 8, wherein the complication is selected from the group consisting of hypercholesterolemia, atherosclerosis and coronary heart disease.

11. A composition for treating obesity and a complication thereof in a subject comprising the strain according to Claim 1 and *Auricularia polytricha*.

12. The method according to Claim 11, wherein the complication  
5 is selected from the group consisting of hypercholesterolemia, atherosclerosis, coronary heart disease, fatty liver, and diabetes mellitus.